

CLAIMS

What is claimed is:

1. A tangential cutting insert comprising:

first and second opposing end surfaces and a peripheral side surface extending
5 therebetween;

first and second peripheral edges, respectively, formed at the intersection of the first and
second end surfaces with the peripheral side surface, at least a section of the first peripheral edge
forming a major cutting edge;

at least one groove in the peripheral side surface extending between and intersecting the
10 first and second end surfaces at said first and second peripheral edges, respectively;

wherein, in first and second opposing side views of the cutting insert, at least the first
peripheral edge is generally concave; and

wherein, in an end view of the cutting insert, the major cutting edge comprises two straight
line portions interrupted by the at least one groove.

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2. The tangential cutting insert according to claim 1, wherein in the first and second
opposing side views, the first peripheral edge extends between first and second end points
thereof, the second end point being closer to a median plane of the cutting insert than the first
end point.

20 3. The tangential cutting insert according to claim 2, wherein in the first side view, a
minimum point exists on the first peripheral edge, the minimum point being closer to the median
plane of the cutting insert than any other point on the at least the first peripheral edge and also
being closer to one end point than the other.

25 4. The tangential cutting insert according to claim 3, wherein the cutting insert is
provided with a through bore passing through the peripheral side surface.

5. The tangential cutting insert according to claim 4, wherein the through bore has an
axis contained in the median plane of the cutting insert.

6. The tangential cutting insert according to claim 1, wherein the at least one groove intersects the first and second end surfaces at secondary edges of respective first and second first peripheral edges.

7. A milling cutter comprising an annular cutter body having a plurality of identical segments equally spaced about an inner circumference of the cutter body, each segment having seven cutting inserts secured thereto, wherein each cutting insert comprises:

first and second opposing end surfaces and a peripheral side surface extending therebetween;

first and second peripheral edges, respectively, formed at the intersection of the first and second end surfaces with the peripheral side surface, at least a section of the first peripheral edge forming a major cutting edge;

at least one groove in the peripheral side surface extending between and intersecting the first and second end surfaces at said first and second peripheral edges, respectively;

wherein, in first and second opposing side views of said each cutting insert, at least the first peripheral edge is generally concave; and

wherein, in an end view of said each cutting insert, the major cutting edge comprises two straight line portions interrupted by the at least one groove.

8. The milling cutter according to claim 7, wherein the seven cutting inserts on each segment are arranged as three pairs and a single unpaired cutting insert.

9. The milling cutter according to claim 8, wherein in a first of the three pairs the cutting inserts are located on opposing side faces of the segment; in a second of the three pairs the cutting inserts are located on the inner face of the segment with one of the cutting inserts adjacent one side face of the segment and the other cutting insert adjacent the opposing side face of the segment; in a third of the three pairs, the cutting inserts are located adjacent a median plane of the segment on either side thereof; and the single unpaired cutting insert is located substantially midway between the two side faces of the segment.

10. The milling cutter according to claim 9, wherein the single unpaired cutting insert is secured to the segment with its groove facing away from the segment, whereas each of the

cutting inserts of the three pairs of cutting inserts is secured to the segment with its groove facing towards the segment.

11. The milling cutter according to claim 7, wherein for each cutting insert, in the first and second opposing side views, the first peripheral edge extends between first and second end points thereof, the second end point being closer to a median plane of the cutting insert than the first end point.

12. The milling cutter according to claim 11, wherein for each cutting insert, in the first side view, a minimum point exists on the first peripheral edge, the minimum point being closer to the median plane of the cutting insert than any other point on the at least the first peripheral edge and also being closer to one end point than the other.

13. The milling cutter according to claim 12, wherein each cutting insert is provided with a through bore passing through the peripheral side surface.

14. The milling cutter according to claim 13, wherein in each cutting insert, the through bore has an axis contained in the median plane of the cutting insert.

15. The milling cutter according to claim 7, wherein in each cutting insert, the at least one groove intersects the first and second end surfaces at secondary edges of respective first and second first peripheral edges.